

# General Electric Model PG7241(FA) Gas Turbine

Estimated Performance - Configuration: DLN Combustor

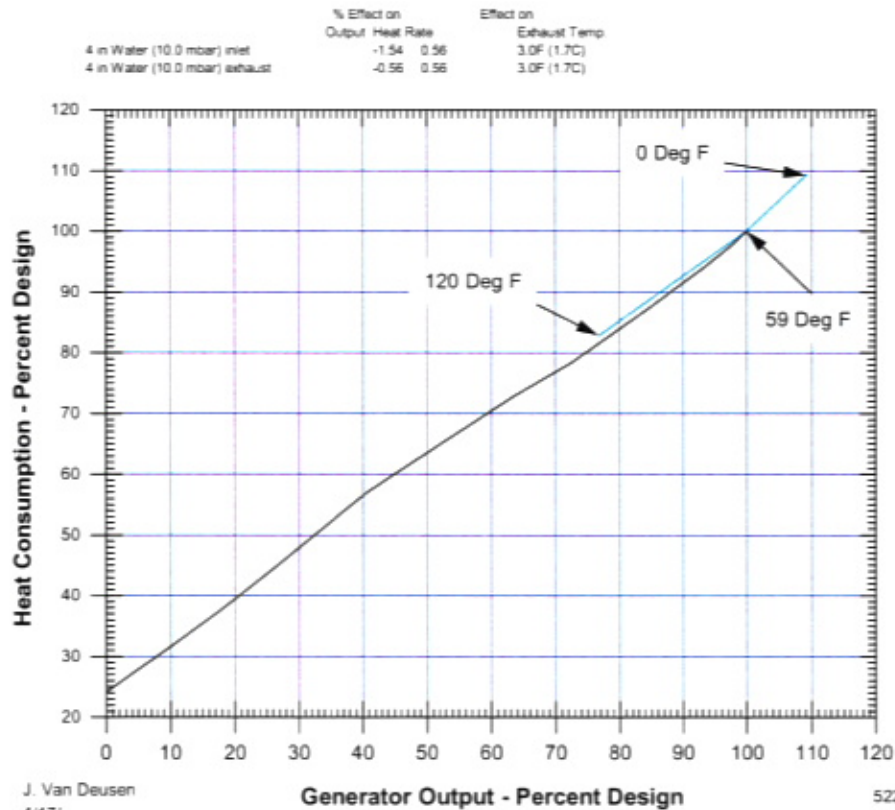
Compressor Inlet Conditions 59 F (15 C), 60% Relative Humidity

Atmospheric Pressure 14.7 psia (1.013 bar)

Fuel			Natural Gas
Design Output	kW		171700
Design Heat Rate (LHV)	Btu/kWh (kJ/kWh)		9360 (9870)
Design Heat Cons (LHV)	Btu/h (kJ/h)x10 <sup>6</sup>		1607.1 (1695.2)
Design Exhaust Flow	lb/h (kg/h)x10 <sup>3</sup>		3542.0 (1607)
Exhaust Temperature	deg F (deg C)		1116 (602.2)
Load			Base

## Notes

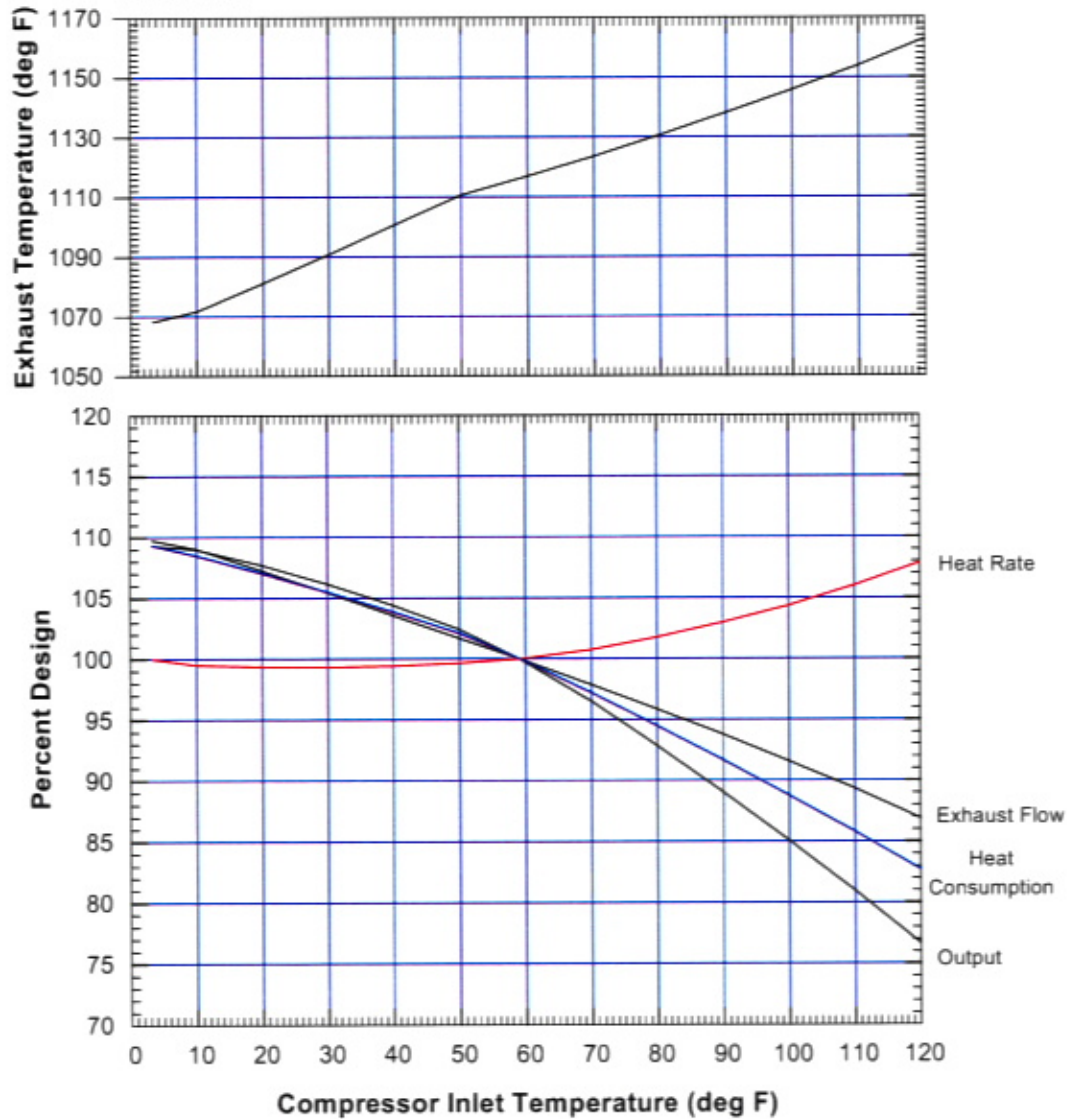
- Altitude correction on curve 416HA852 Rev A.
- Ambient temperature correction on curve 522HA852 Rev A.
- Effect of modulating IGV's on exhaust temperature and flow on curve 522HA853 Rev A.
- Humidity effects on curve 498HA697 Rev B - all performance calculated with a constant specific humidity of .0064 or less as not to exceed 100% relative humidity.
- Plant Performance is measured at the generator terminals and includes allowances for the effects of inlet bleed heating, excitation power, shaft driven auxiliaries, and 3.04 in H<sub>2</sub>O (8.33 mbar) inlet and 5.5 in H<sub>2</sub>O (13.70 mbar) exhaust pressure drops and a DLN Combustor.
- Additional inlet and exhaust pressure loss effects.



## GENERAL ELECTRIC MODEL PG7241(FA) GAS TURBINE

### Effect of Compressor Inlet Temperature on Output, Heat Rate, Heat Consumption, Exhaust Flow And Exhaust Temperature at Baseload

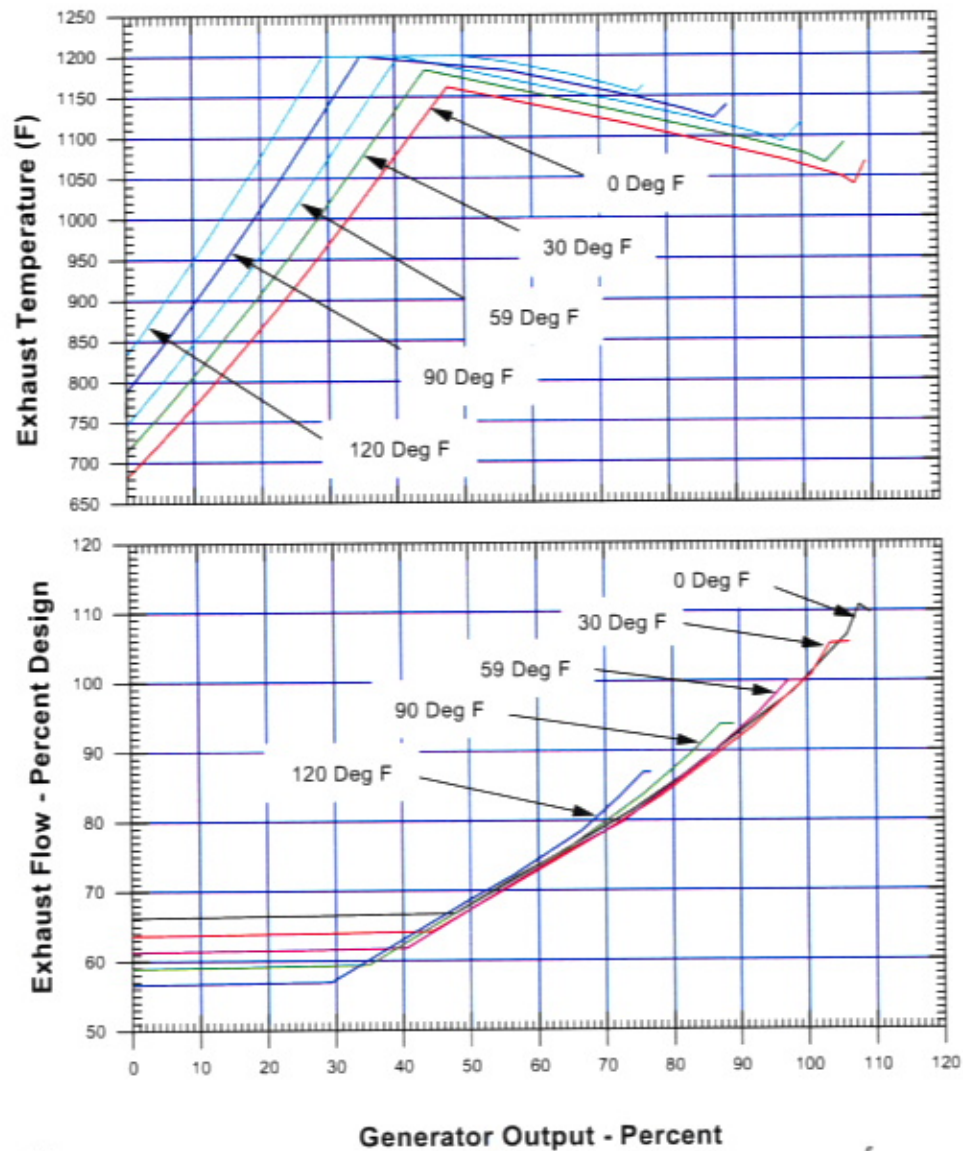
Fuel: Natural Gas  
Design Values on Curve 522HA851 Rev A  
DLN Combustor



## GENERAL ELECTRIC MODEL PG7241(FA) GAS TURBINE

### Effect of Inlet Guide Vane on Exhaust Flow and Temperature As a Function of Output and Compressor Inlet Temperature

Fuel: Natural Gas  
Design Values on Curve Rev A  
DLN Combustor

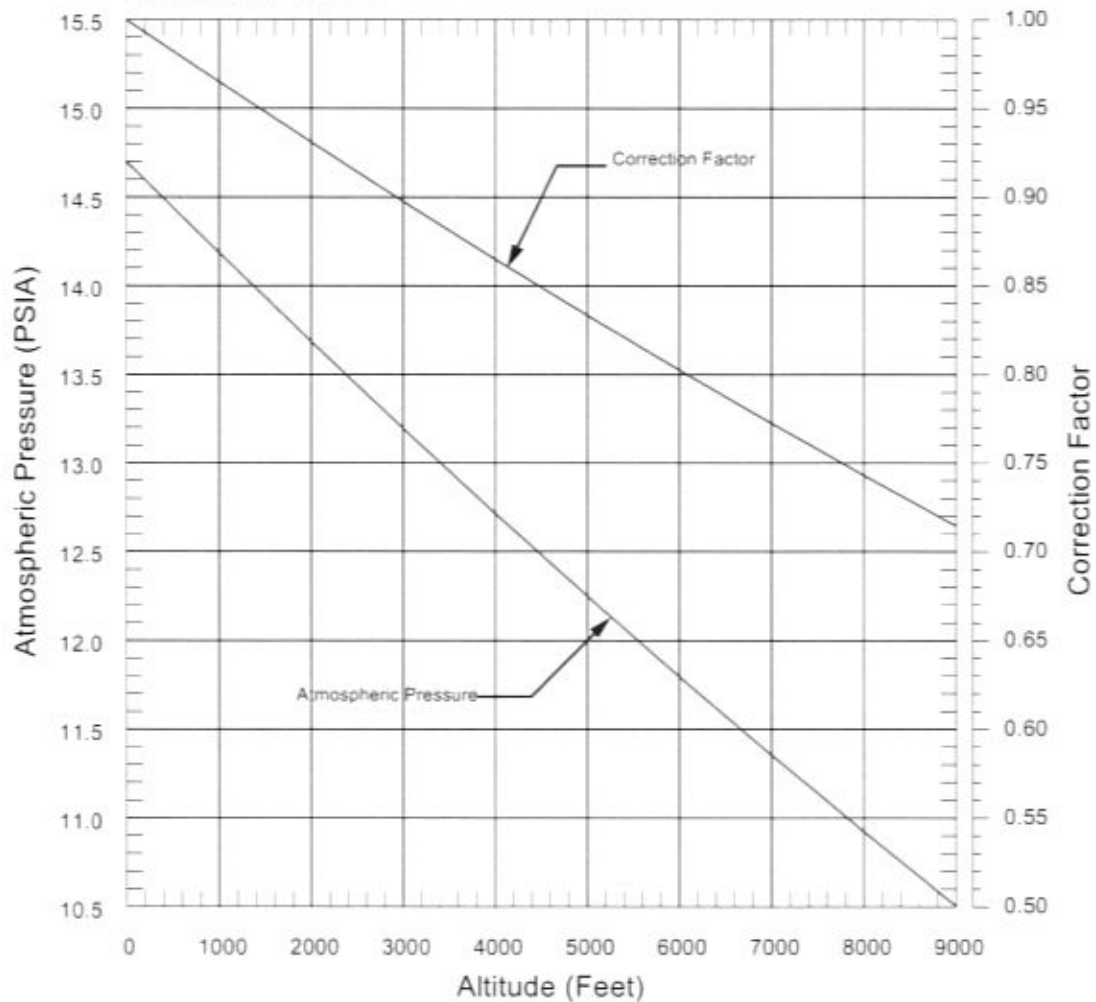


# GENERAL ELECTRIC GAS TURBINE ALTITUDE CORRECTION CURVE

ALTITUDE VS ATMOSPHERIC PRESSURE  
AND  
ALTITUDE VS CORRECTION FACTOR  
FOR GASTURBINE OUTPUT, FUEL CONSUMPTION, AND EXHAUST FLOW

## NOTES

- 1 Exhaust Temperature, Heat Rate, and Thermal Efficiency are not affected by altitude.
- 2 Correction Factor =  $P_{\text{atm}}/14.7$

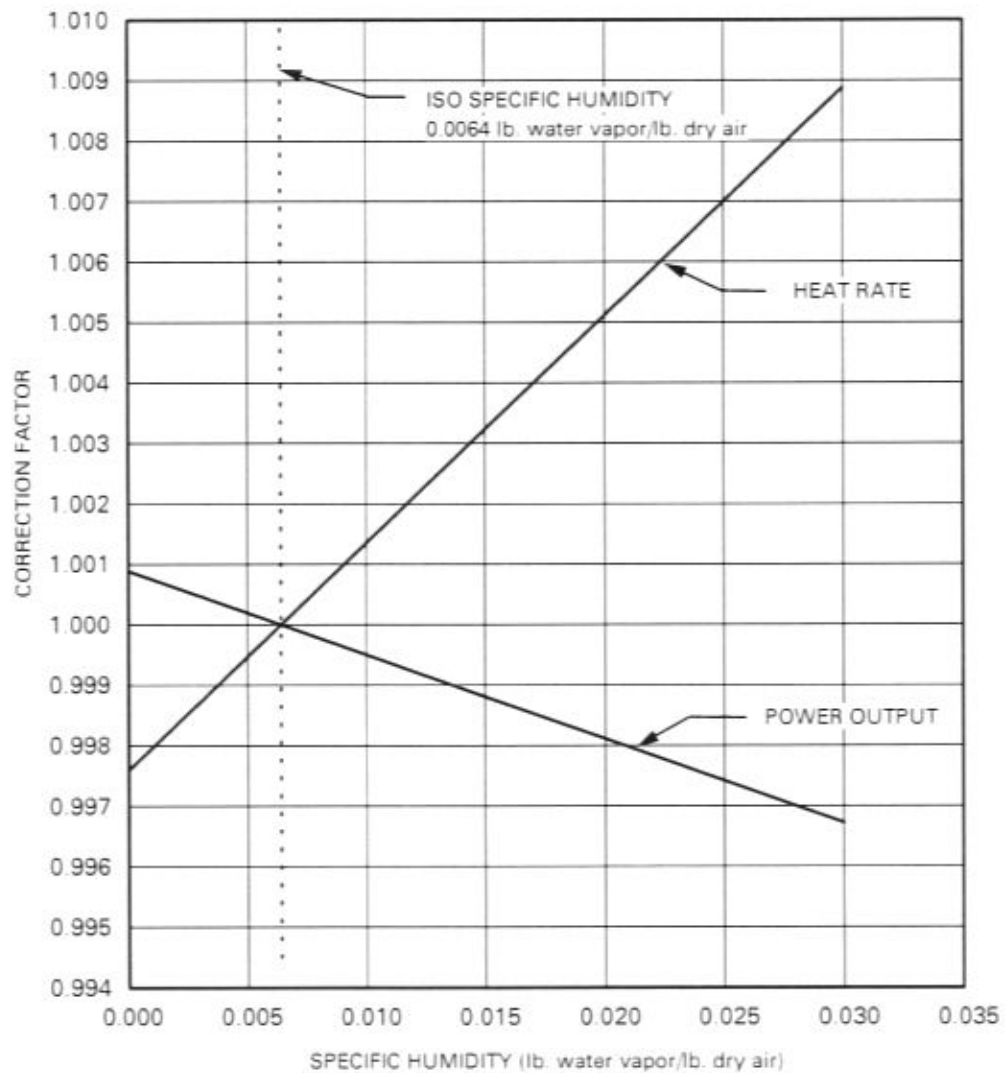


416HA6  
Rev-B

## General Electric MS6001, MS7001 And MS9001 Gas Turbines

Corrections To Output And Heat Rate  
For Non-Iso Specific Humidity Conditions

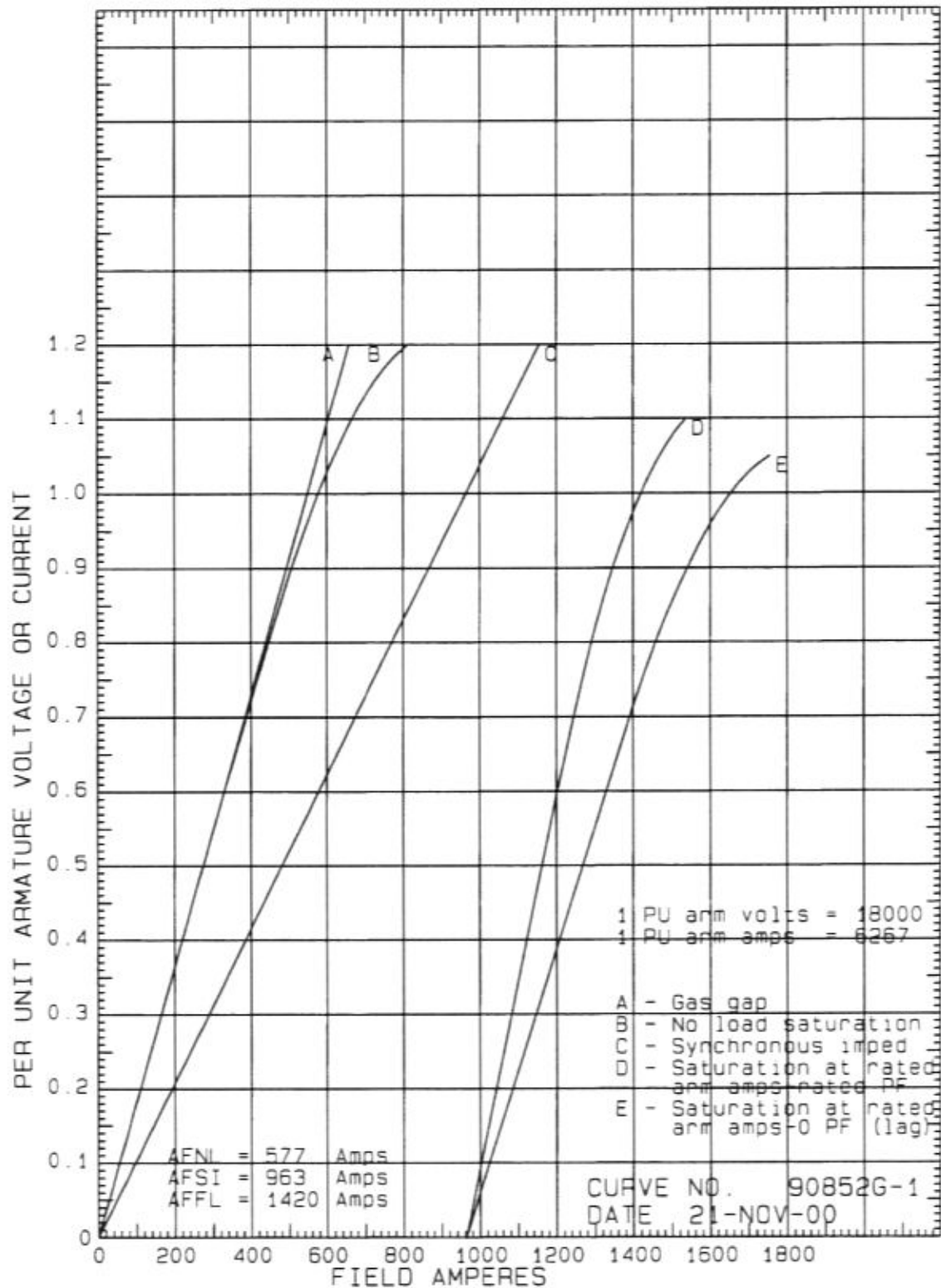
For Operation At Base Load On Exhaust  
Temperature Control Curve



# ESTIMATED SATURATION AND SYNCHRONOUS IMPEDANCE CURVES

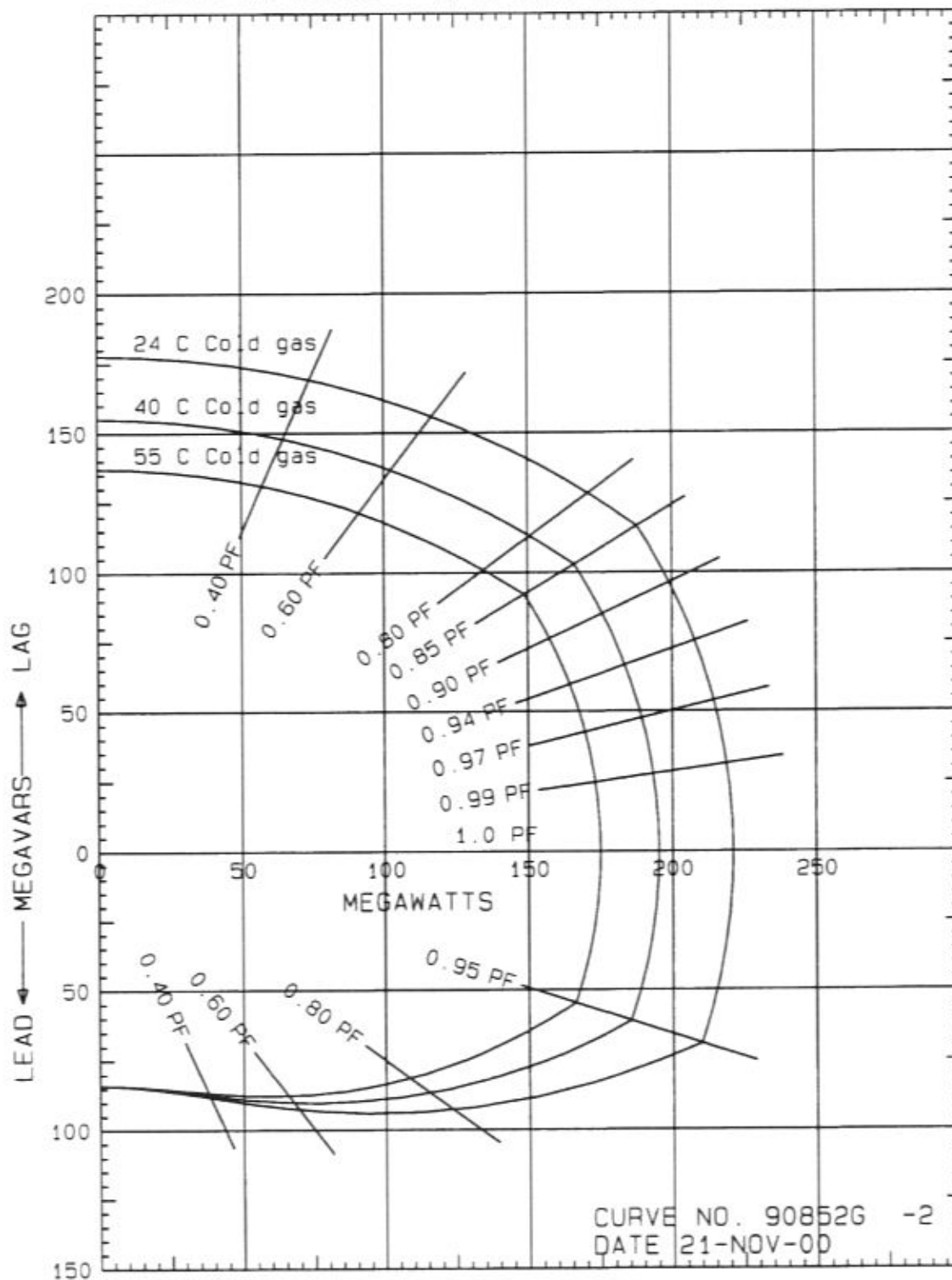
195400 KVA - 3600 RPM - 18000 VOLTS - 0.85 PF

285 FLD VOLTS - 40 C COLD GAS - 30 PSIG H2



# ESTIMATED REACTIVE CAPABILITY CURVES

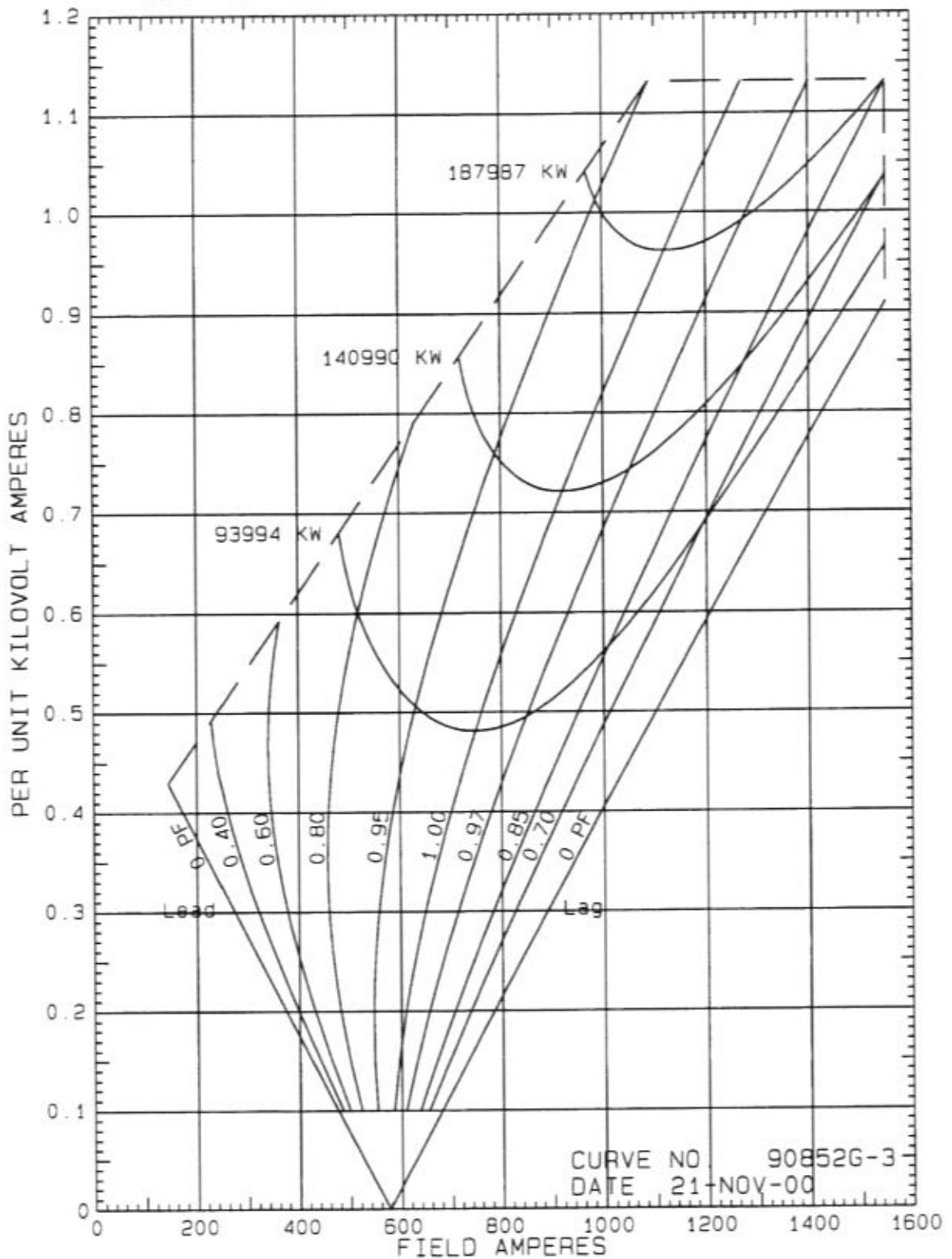
195400 KVA - 3600 RPM - 18000 VOLTS - 0.85 PF  
285 FLD VOLTS - 40 C COLD GAS - 30 PSIG H2





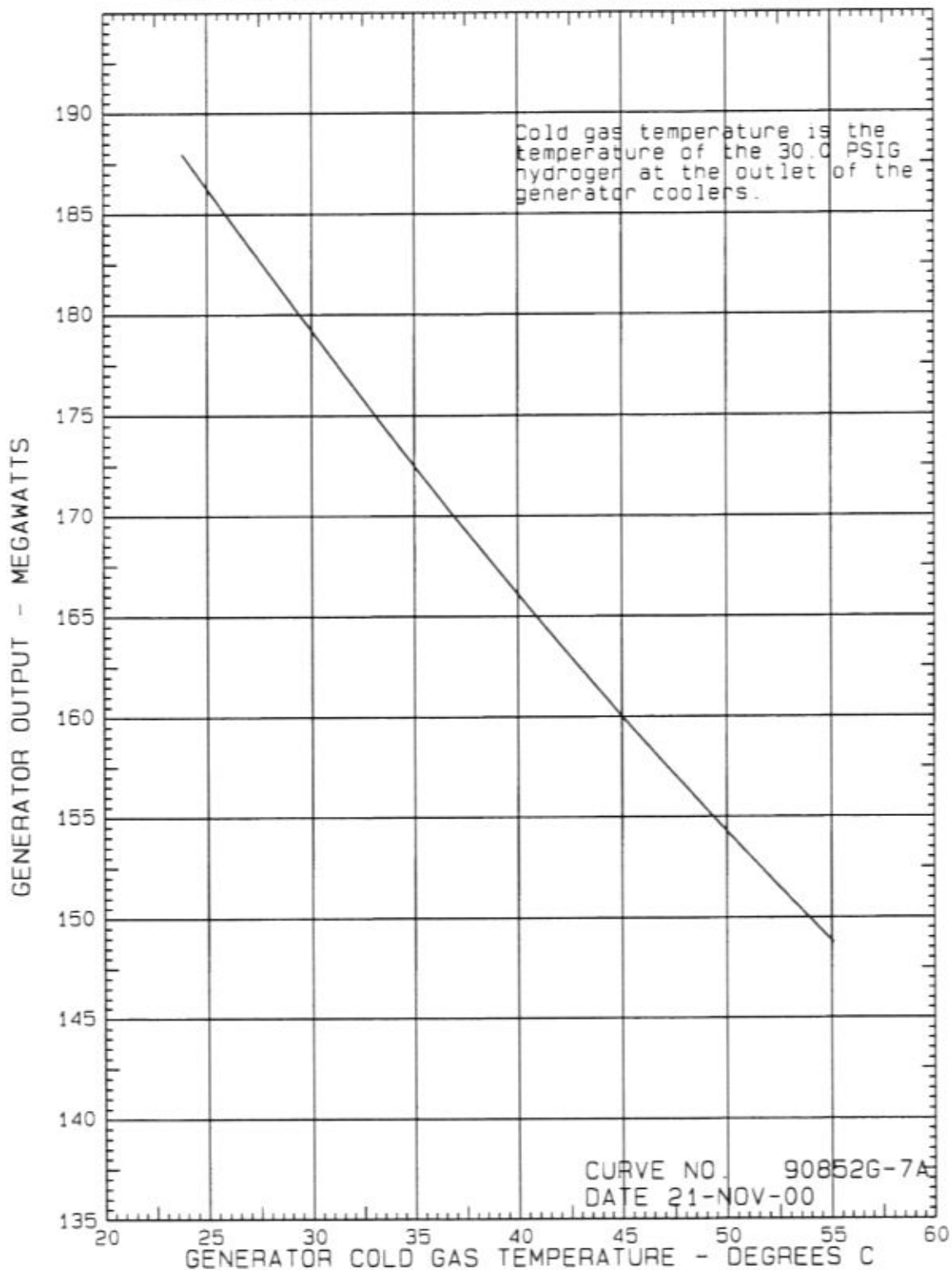
# ESTIMATED EXCITATION V CURVES

195400 KVA - 3600 RPM - 18000 VOLTS - 0.85 PF  
285 FLD VOLTS - 40 C COLD GAS - 30 PSIG H2





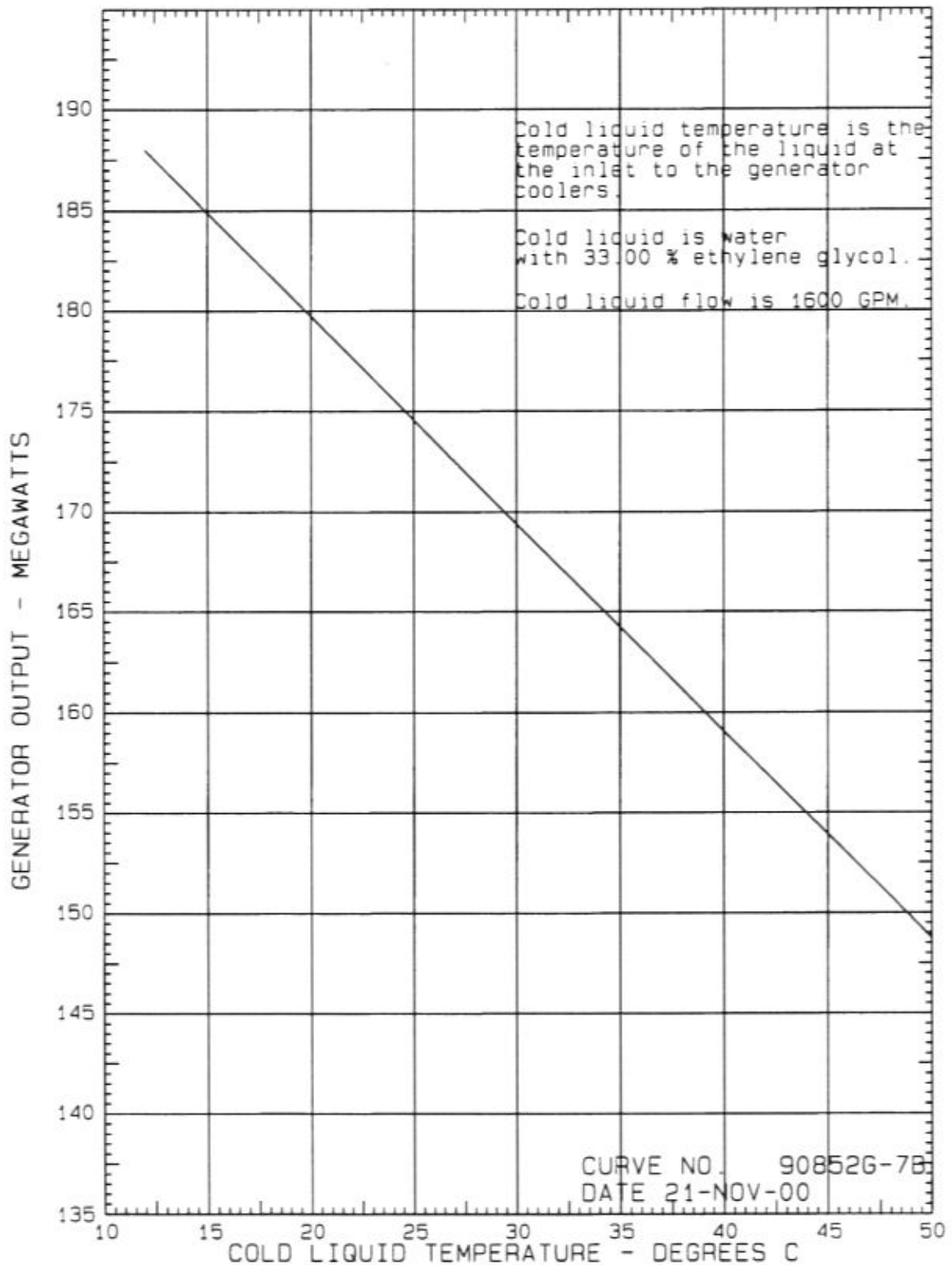
GENERATOR OUTPUT AS A FUNCTION OF COLD GAS TEMPERATURE  
195400 KVA - 3600 RPM - 18000 VOLTS - 0.85 PF  
285 FLD VOLTS - 40 C COLD GAS - 30 PSIG H2



# GENERATOR OUTPUT AS A FUNCTION OF COLD LIQUID TEMPERATURE

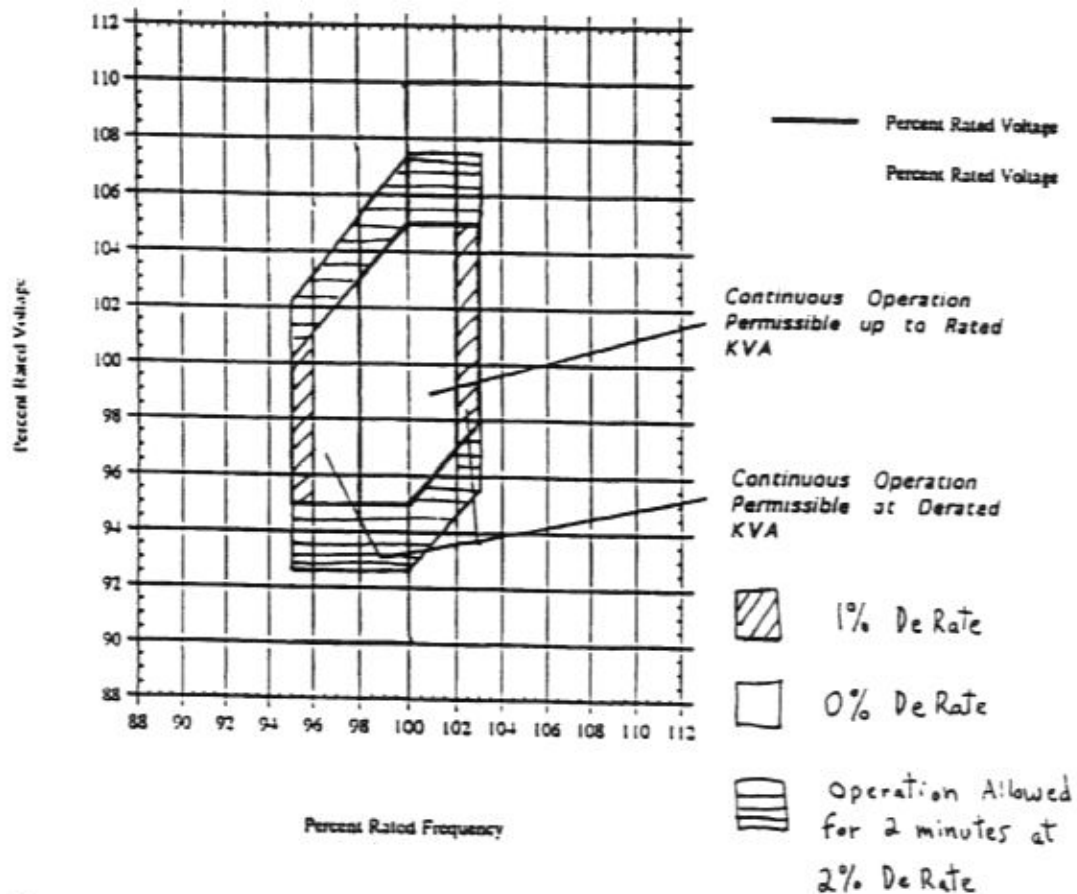
195400 KVA - 3600 RPM - 18000 VOLTS - 0.85 PF

285 FLD VOLTS - 40 C COLD GAS - 30 PSIG H2



# Voltage - Frequency Capability Curve

## Attachment A



### Notes:

1. Actual Over and Under Frequency may be Limited by Turbine.
2. Area Within Rated KVA Operation may Increase by 10°C.
3. Area Within Derated KVA Operation may Increase by 25°C with Loss of Life.

JHR 11/23/96

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